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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/762,532      | 01/23/2004  | Ayumu Fujita         | Q7944S              | 5352             |

23373 7590 05/04/2005

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EXAMINER

OH, TAYLOR V

|          |              |
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| ART UNIT | PAPER NUMBER |
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1625

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/762,532

Applicant(s)

FUJITA ET AL.

Examiner

Taylor Victor Oh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **Final Rejection**

### **The Status of Claims**

Claims 1-6, and 8-15 are pending.

Claims 1-6, and 8-15 have been rejected.

Claim 7 is canceled.

### **Claim Rejections - 35 USC § 102**

Applicants' argument filed 12/7/2004 have been fully considered but are not persuasive.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The rejection of Claims 1, 5, 11-12, and 13-14 under 35 U.S.C. 102(b) as being anticipated clearly by Izumi (JP- 57130954 A) has been maintained with the reasons of record filed on 9/7/04.

### **Claim Rejections - 35 USC § 103**

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The rejection of Claims 1-6 and 8-15 under 35 U.S.C. 103(a) as being unpatentable over Izumi (JP- 57130954 A) in view of Kashnitz et al (U.S. 5,518,699) has been maintained with the reasons of record filed on 9/7/04.

#### Applicants' Argument

Applicants argue the following issues:

- a. Izumi (JP- 57130954 A) does not disclose "the presence of an aqueous solution of heteropolyacid on active carbon ; furthermore, conducting the esterification of the present invention in the presence of water is unobvious to the skilled artisan in the art since the activity of the main reaction process decreases in the presence of water; therefore, the 102 rejection is improper;
- b. Izumi (JP- 57130954 A) does disclose a catalyst comprised of a heteropolyacid supported on silica gel which did not produce results as good as those obtained when using activated carbon; furthermore, there is no motivation to employ any silica containing catalyst disclosed in Kashnitz in the process of Izumi;

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- c. Example of 3 of Kashnitz uses the  $\text{TiO}_2$  catalyst and Kashnitz does not teach the use of a catalyst of heteropolyacid on an inorganic support in the presence of water.

Applicants' arguments have been noted, but the arguments are not persuasive.

First, regarding the applicants' first argument, the Examiner has noted applicants' arguments. However, the preparation of heteropolyacid on active carbon is involved in using water and the actual esterification process is also involved in the presence of water in the following:  $\text{R-OH} + \text{R}'\text{-COOH} \rightarrow \text{H}_2\text{O} + \text{R}'\text{COO R}$ . Furthermore, applicants have admitted that the presence of water makes the decrease in the activity of the main reaction process, which means that the Izumi's reaction process does take place in the presence of water regardless of how it affects the activity of formation of the desired ester. Therefore, the prior art is still applicable to the 102 rejection.

Second, regarding the applicants' second argument, the Examiner has noted applicants' arguments. However, silica gel has been used as a support for heteropolyacid in the comparison test; what is important is the fact that Izumi has expressly shown the teaching of equivalence with respect to workability between the use of silica gel and that of active carbon in the process regardless of their efficiency because the claims are not directed to the efficiency of using the active carbon versus the silica gel in the claimed process. Furthermore, on the contrary to applicants' argument, there is a motivation to combine Kashnitz with Izumi. Izumi does teach the process of producing ethyl ester of acetic acid by reacting ethanol and acetic acid in the presence of an aqueous solution of heteropolyacid. Similarly, Kashnitz et al also

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teaches the process for preparing, ethyl ester of acetic acid (see col. 4 ,lines 52-56) in the presence of an inorganic catalyst (see col. 2 ,lines 60-65) containing  $\text{SiO}_2$  , clays, heteropolyacids (see col. 3 ,lines 19-23) which are stable at high temperatures. Both prior art processes have been ethyl ester of acetic acid by reacting ethanol and acetic acid in the presence of the heteropolyacid. Kashnitz et al has offered the guidance that the heat stable inorganic catalyst (see col. 2 ,lines 60-65) containing  $\text{SiO}_2$  , clays, heteropolyacids can be advantageous during the process. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to incorporate Kashnitz's et al inorganic catalyst (see col. 2 ,lines 60-65) containing  $\text{SiO}_2$  into the Izumi process because the skilled artisan in the art would expect the overall heat stability of the Izumi inorganic catalyst to be enhanced as shown in the Kashnitz et al. Therefore, the prior art are still applicable to the 103 rejection.

Third, regarding the applicants' third argument , the Examiner has noted applicants' arguments. However, the Kashnitz et al does teach the inorganic catalyst, such as  $\text{TiO}_2$  containing  $\text{SiO}_2$  , clays, heteropolyacids (see col. 3 ,lines 19-23). This does read on the claimed limitation which says that " said catalyst comprises an inorganic support having one hereopolyacid " because the word " comprises" may include many constituents. Regarding the absence of teaching the use of water in Kashnitz, the primary Izumi does teach that the actual esterification process is involved in the presence of water in the following :  $\text{R-OH} + \text{R}'\text{-COOH} \rightarrow \text{H}_2\text{O} + \text{R}'\text{ COO R}$ . The secondary Kashnitz reference does not have to meet every element in the claims, but it can supplement the deficiency of the primary prior art as long

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as there is a motivation to combine the prior art. Izumi does teach the process of producing ethyl ester of acetic acid by reacting ethanol and acetic acid in the presence of an aqueous solution of heteropolyacid. Similarly, Kashnitz et al also teaches the process for preparing, ethyl ester of acetic acid (see col. 4 ,lines 52-56) in the presence of an inorganic catalyst (see col. 2 ,lines 60-65) containing SiO<sub>2</sub> , clays, heteropolyacids (see col. 3 ,lines 19-23) which are stable at high temperatures. Both prior art processes have been ethyl ester of acetic acid by reacting ethanol and acetic acid in the presence of the heteropolyacid. Kashnitz et al has offered the guidance that the heat stable inorganic catalyst (see col. 2 ,lines 60-65) containing SiO<sub>2</sub> , clays, heteropolyacids can be advantageous during the process. Therefore, it would have been obvious to the skilled artisan in the art to be motivated to incorporate Kashnitz's et al inorganic catalyst (see col. 2 ,lines 60-65) containing SiO<sub>2</sub> into the Izumi process because the skilled artisan in the art would expect the overall heat stability of the Izumi inorganic catalyst to be enhanced as shown in the Kashnitz et al. Therefore, the Kashnitz et al prior art are still applicable to the 103 rejection.

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

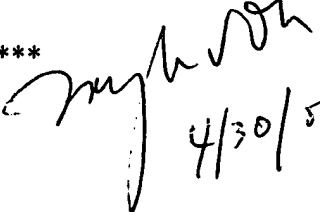
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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taylor Victor Oh whose telephone number is 571-272-0689. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cecilia Tsang can be reached on 571-272-0562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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